

# SAFETY DATA SHEET

## KUMAC NS

Date of issue: 2013-06-13

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Version: R,0003.,0001

### 1. IDENTIFICATION

#### A. Product name

- KUMAC NS

#### B. Recommended use and restriction on use

- General use : Accelerator for rubber product  
 - Restriction on use : Not available

#### C. Manufacturer/Supplier/Distributor information

##### o Manufacturer information

- Company name : Kumho Petrochemical Co., Ltd. Yeosu Specialty chemicals Plant  
 - Address : 227, Yeosusandan 2-ro, Yeosu-si, Jeollanam-do, Korea  
 - Dept. : Production Technology Team  
 - Telephone number : +82-61-688-3920  
 - Emergency telephone number : +82-61-688-3931~4  
 - Fax number : +82-61-688-3939

##### o Supplier/Distributor information: kwseo08@kkpc.com

- Company name  
 - Address  
 - Dept.  
 - Telephone number  
 - Emergency telephone number  
 - Fax number

### 2. HAZARD IDENTIFICATION

#### A. GHS Classification

- Skin sensitization : Category1  
 - Specific target organ toxicity(Repeated exposure) : Category2  
 - Acute aquatic toxicity : Category1  
 - Chronic aquatic toxicity : Category1

#### B. GHS label elements

##### o Hazard symbols



##### o Signal words

- Warning

##### o Hazard statements

- H317 May cause an allergic skin reaction  
 - H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)  
 - H400 Very toxic to aquatic life  
 - H410 Very toxic to aquatic life with long lasting effects

##### o Precautionary statements

###### 1) Prevention

- P260 Do not breathe dust/fume.
- P261 Avoid breathing dust/fume.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

#### 2) Response

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P314 Get medical advice/attention if you feel unwell.
- P321 Specific treatment
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.
- P391 Collect spillage.

#### 3) Storage

- Not applicable

#### 4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

### C. Other hazards which do not result in classification : (NFPA Classification)

#### o NFPA grade (0 ~ 4 level)

- Health : 0, Flammability : 1, Reactivity : 0

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide	-	95-31-8	98
Sodium chloride	-	7647-14-5	1
Water	-	7732-18-5	1

### 4. FIRST AID MEASURES

#### A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

#### B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Wash thoroughly after handling.

#### C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.

#### D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

#### E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

#### F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

## 5. FIREFIGHTING MEASURES

### A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

### B. Specific hazards arising from the chemical

- Can be ignited by heat, spark, flame.
- The container may explode on heating.
- Some can ride, but not easily ignite.
- Can decompose at high temperature to generate toxic gas.
- Inhalation of the substance may be harmful.
- Some fluids may cause dizziness, suffocation-causing vapors.
- Non-flammable, the substance itself does not burn but decomposes on heating and may cause corrosive/toxic fumes.

### C. Special protective actions for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Do not access if the tank on fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.

## 6. ACCIDENTAL RELEASE MEASURES

### A. Personal precautions, protective equipment and emergency procedures

- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Remove all sources of ignition.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.

### B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

### C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small liquid state spills: Appropriate container for disposal of spilled material collected.
- For disposal of spilled material in appropriate containers collected and clear surface.
- Avoid entering to sewers or water system.
- Prevent the influx to waterways, sewers, basements or confined spaces.

## 7. HANDLING AND STORAGE

### A. Precautions for safe handling

- Comply with all applicable laws and regulations for handling
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

### B. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.

- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.
- Collected them in sealed containers.
- Store away from water and sewer.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### A. Exposure limits

- **ACGIH TLV**
  - Not available
- **OSHA PEL**
  - Not available

### B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

### C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
  - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
  - Respiratory protection is ranked in order from minimum to maximum.
  - Consider warning properties before use.
  - Dust, mist, fume-purifying respiratory protection
  - Any air-purifying respirator with a corpuscle filter of high efficiency
  - Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
  - Self-contained breathing apparatus with a corpuscle filter of high efficiency
  - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- **Eye protection**
  - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
  - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- **Hand protection**
  - Wear appropriate glove.
- **Skin protection**
  - Wear appropriate clothing.
- **Others**
  - Not available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Solid(Pellets)
- Color	Blue white lines
B. Odor	Not available
C. Odor threshold	Not available
D. pH	6.9
E. Melting point/Freezing point	≥ 105 °C
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	165 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	-/10~20 g/m <sup>3</sup>
K. Vapour pressure	Not available
L. Solubility	Slightly soluble (Water), Soluble (Organic solvent)

M. Vapour density	Not available
N. Specific gravity(Relative density)	1.28
O. Partition coefficient of n-octanol/water	log Pow 4.38
P. Autoignition temperature	340~380 °C
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	238.38

## 10. STABILITY AND REACTIVITY

### A. Chemical Stability

- This material is stable under recommended storage and handling conditions.
- The container may explode on heating.
- Some can burn but not easily ignite.

### B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

### C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

### D. Incompatible materials

- combustible material, reducing material

### E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

## 11. TOXICOLOGICAL INFORMATION

### A. Information on the likely routes of exposure

- (Respiratory tracts)
  - Not available
- (Oral)
  - Not available
- (Eye·Skin)
  - May cause an allergic skin reaction

### B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
  - \* Oral
    - Product (ATEmix) : >5,000mg/kg
    - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : LD50 > 2,000 mg/kg Rat
    - [Sodium chloride] : LD50 = 3,000 mg/kg Rat (IUCLID)
    - [Water] : LD50 > 90,000 mg/kg Rat (KOSHA)
  - \* Dermal
    - Product (ATEmix) : >5,000mg/kg
    - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : LD50 7,940 mg/kg Rabbit
    - [Sodium chloride] : LD50 > 10,000 mg/kg Rabbit (Thomson Micromedex)
  - \* Inhalation
    - Product (ATEmix) : Not available
    - [Sodium chloride] : LC50 > 10.5 mg/L 4 hr Rat (Thomson Micromedex)
- Skin corrosion/irritation
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : Mild irritant has been reported in rabbits. (KOSHA)
  - [Sodium chloride] : Rabbit: Mild irritant (IUCLID)
- Serious eye damage/irritation
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : Mild irritant (rabbit) (KOSHA)
  - [Sodium chloride] : Rabbit: Mild irritant (ECHA)

- **Respiratory sensitization**
  - Not available
- **Skin sensitization**
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : guinea pig-positive (KOSHA)
- **Carcinogenicity**
  - \* **IARC**
    - Not available
  - \* **OSHA**
    - Not available
  - \* **ACGIH**
    - Not available
  - \* **NTP**
    - Not available
  - \* **EU CLP**
    - Not available
- **Germ cell mutagenicity**
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : Toxic lethal (Bacterial Reverse Mutation Test, Ames Test, in vivo mutagenicity test of germ cell, somatic cell in vivo mutagenicity test (micronucleus test) - negative (KOSHA)
  - [Sodium chloride] : In vitro - Mammalian Chromosomal aberration test, Ames Test: positive (Mouse lymphoma L5178Y cells; absence of metabolic activity), In vivo - Chromosomal aberration test: Positive (Rat, Bone Marrow Cell), OECD Guideline 475 In vitro -(Bacterial Reverse Mutation Test, Ames Test: negative, no known metabolic activation system (Salmonella typhimurium strains TA97, TA98, TA100, TA1535, TA1537, TA1538) (ECHA)
- **Reproductive toxicity**
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : Repeated dose toxicity/reproductive toxicity studies reported no effect on sex organs or next generation of parent animals. (KOSHA)
  - [Sodium chloride] : Developmental toxicity test using rats showed an increase in blood pressure and hypertrophy of the heart in the parents (ECHA)
- **STOT-single exposure**
  - [Sodium chloride] : Rat/Oral (1 mg/kg 24 hr): Sodium-Potassium Emission Effect
- **STOT-repeated exposure**
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : Fear degeneration of proximal tubule, haemolysis, localized hepatitis or multiple necrosis, and histopathological changes in liver were reported in laboratory animals. (KOSHA)
  - [Sodium chloride] : 0.25% (KCl), 1% (KCl), 4% (KCl), 4% (NaCl), and 2% (KCl) of the rat (male) by the oral method of OECD TG 453 at 4% (NaCl) concentration as a result of repeated exposure for 2 years at the concentration of + 2% (NaCl) (ECHA)
- **Aspiration hazard**
  - Not available

## 12. ECOLOGICAL INFORMATION

### A. Ecotoxicity

- **Fish**
  - [Sodium chloride] : LC50 5840 mg/L 96 hr *Lepomis macrochirus* (Reliability 1, ASTM E729) (ECHA)
- **Crustaceans**
  - [Sodium chloride] : LC50 874 mg/L 48 hr *Daphnia magna* (Reliability 2, Standard Methods for Examination of water and waste water) (ECHA)
- **Algae**
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : ErC50 0.071 mg/L 72 hr *Selenastrum* (NITE: SIDS, 2004)
  - [Sodium chloride] : EC50 0.0269 mg/L 72 hr (*Pseudokirchneriella subcapitata*, Growth Rate) 1, OECD Guideline 201, GLP) (ECHA)

### B. Persistence and degradability

- **Persistence**
  - [Sodium chloride] : log Kow -0.46 (Estimate)
  - [Water] : log Kow = -1.38
- **Degradability**
  - Not available

### C. Bioaccumulative potential

- **Bioaccumulative potential**
  - [Sodium chloride] : BCF 3.162 (Estimate)
- **Biodegradation**
  - [N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide] : BOD: 0% (NITE: existing chemical safety inspections data)

**D. Mobility in soil**

- Not available

**E. Other adverse effects**

- Not available

**13. DISPOSAL CONSIDERATIONS****A. Disposal methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

**B. Special precautions for disposal**

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

**14. TRANSPORT INFORMATION****A. UN No. (IMDG CODE/IATA DGR)**

- 3077

**B. Proper shipping name**

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.

**C. Hazard Class**

- 9

**D. IMDG CODE/IATA DGR Packing group**

- III

**E. Marine pollutant**

- Applicable

**F. Special precautions for user related to transport or transportation measures**

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

**15. REGULATORY INFORMATION****A. National and/or international regulatory information**

- o **POPs Management Law**
  - Not applicable
- o **Information of EU Classification**
  - \* **Classification**
    - Not applicable
- o **U.S. Federal regulations**
  - \* **OSHA PROCESS SAFETY (29CFR1910.119)**
    - Not applicable
  - \* **CERCLA Section 103 (40CFR302.4)**
    - Not applicable
  - \* **EPCRA Section 302 (40CFR355.30)**
    - Not applicable
  - \* **EPCRA Section 304 (40CFR355.40)**
    - Not applicable

**\* EPCRA Section 313 (40CFR372.65)**

- Not applicable

o **Rotterdam Convention listed ingredients**

- Not applicable

o **Stockholm Convention listed ingredients**

- Not applicable

o **Montreal Protocol listed ingredients**

- Not applicable

## 16. OTHER INFORMATION

### A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

### B. Issue date

- 2013-06-13

### C. Revision number and Last date revised

- 2 times, 2018-08-30

### D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).